

## RRG Pricing Seminar

June 23, 2005



## **Proposed Process**

- We will note questions as we go and provide brief clarifications when possible
- We will answer questions and receive feedback about the entire presentation at the end
- Questions for which we don't have answers
  - We'll provide follow-up answers if we can
  - ➢ If not, the issues will be noted for further work following Decision Point 2
- "Questions & Answers" document may be helpful



### This seminar will cover

- Overview of Pricing Proposals 9:15 a.m.
- How Did We Get Here? 9:30 a.m.
- Pricing Assignment 9:40 a.m.
- Background 9:45 a.m.
- Principles and Objectives 9:50 a.m.
- New Service How Much Revenue Do We Need? 10:00 a.m.
- Recap of Market and Operations Design 10:15 a.m. Break –
- More About New Service 10:45 a.m.
- Pricing Options 11:00 to 11:30 a.m. Discussion –
   Lunch –
- Pricing for Upgrades and Expansion 1:00 p.m.
- Revenue Allocation 1:15 p.m.
- Replacement Revenues 1:45 p.m.
- Grid Management Charge (GMC) 2:00 p.m.
- What Comes After Company Rates 2:15 p.m. Break –
- Question, Answers, Feedback 2:30 to 5:00 p.m.



# Overview of Pricing Proposals

- We will cover:
  - Pricing new long-term service from existing facilities (four options)
  - Pricing new long-term service that requires upgrades or expansion
  - Allocating revenues from sales of new rights (Injection-Withdrawal Rights, or "IWRs") that can be granted using existing capacity (Available Flowgate Capacity or "AFC") on the Grid West system
  - Replacement revenues if needed to offset any under-recovery (resulting from Grid West implementation) that remains after AFC sales revenues have been allocated
  - Grid Management Charge



# Overview of Pricing Proposals

- Some context that we will cover as we go:
  - Magnitude the role of legacy services and payments
  - Understanding "new service"
  - "Company rates"
  - What is a "point" of injection or withdrawal



Overview of Pricing Proposals

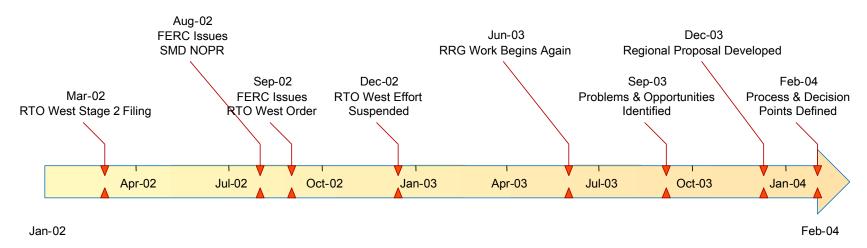
#### **How Did We Get Here?**

- Pricing Assignment
- Background
- Principles and Objectives
- New Service How Much Revenue Do We Need?
- Recap of Market and Operations Design
- More About New Service
- Pricing Options
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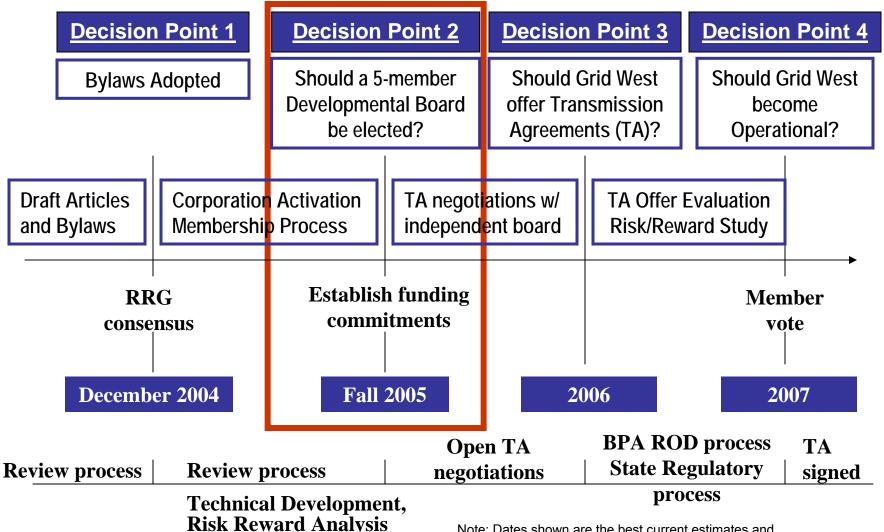
### **How Did We Get Here?**

The following is a brief history of Grid West from the RTO West Stage 2 filing to the current Decision Point process...





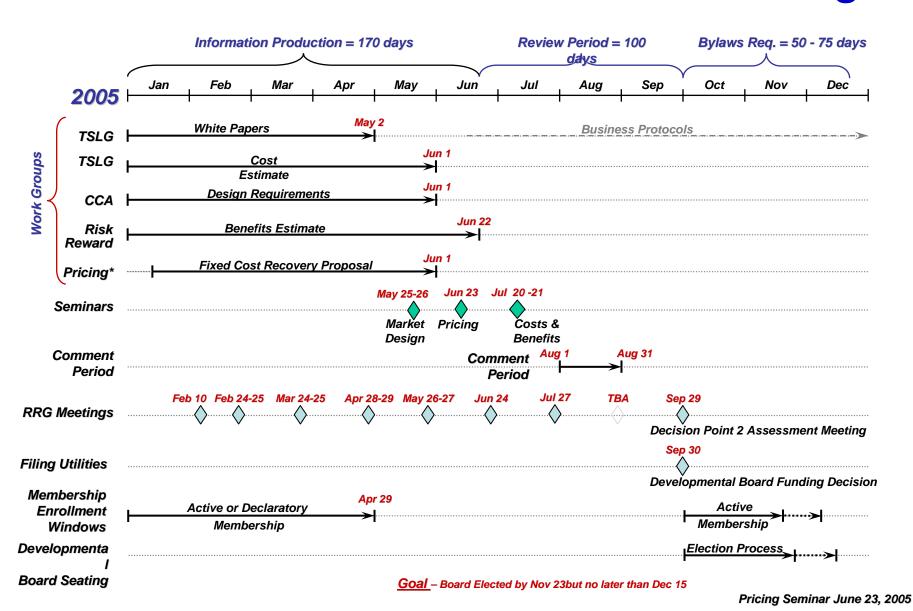
### **How Did We Get Here?**



Note: Dates shown are the best current estimates and subject to change . *Pricing Seminar June 23, 2005* 



### 2005 Timeline to Board Seating





### The Components

The following components are input into the decision point two process...

#### Conceptual Market Design Report

- Overview paper
- White papers

#### **Pricing Report**

- Long-term service
- Grid Management

#### **Risk Reward Report**

- Benefits
- Cost estimates

#### **Decision Point 2**

Should a five-member Developmental Board be seated?

Should the TOs sign a two-year funding agreement?



### **Progress Report**

The following is a brief progress report on the various components...

#### **Market Design Update**

- May 1 Layer 2 Design Complete
- · May 13 White Papers Posted
- May 25-26 Design Seminar

#### **Pricing Update**

• June 23 – Pricing Seminar

#### **Risk/Reward Update**

July 20 and 21 – Risk/Reward Seminar Scheduled



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- The 2005 work plan said "fixed cost recovery proposal"
- With RRG guidance, the pricing work group broke this down into:
  - Pricing for service from existing facilities managed by Grid West
  - Pricing for service from new or upgraded transmission facilities within the Grid West system
  - Pricing to recover Grid West's development and operating costs



- Goal: facilitate evaluation for Decision Point 2
  - Decision Point 2 is scheduled for fall 2005
- Using the "layering" construct adopted by the TSLG, the pricing proposals are somewhere between the Layer 1 to Layer 2 level of detail
- Conceptual framework to demonstrate that there are workable approaches
  - Logical elements that fit together with each other and with Grid West market and operations design
  - No "fatal flaws"



- We are not trying to offer decisive, detailed answers to every possible question about pricing for Grid West
- Pricing work to date would be "handed off" to the Developmental Board if Grid West moves forward after Decision Point 2



- Overview of Pricing Proposals
- How Did We Get Here?
- Pricing Assignment

#### **Background**

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## Background

- Foundation for pricing work
  - Regional Proposal
  - Regional Proposal was built from the "problems and opportunities" document
- What the "problems and opportunities" document said about pricing issues:
  - Use of existing system
    - No correlation between transactional charges (to recover embedded costs) and marginal cost of system use
    - Transactions must be arranged with multiple providers



## **Background**

- Use of Existing System (cont'd)
  - Pancaking effects on wholesale energy markets include:
    - Limits diversity of options available to buyers
    - Limits ability to complete otherwise economic transactions
    - Sub-optimal resource development
    - Difficulty in long-term power contracting



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- Following the Regional Proposal, any Grid West proposal should:
  - be a clear improvement over the existing situation and respond to the identified problems
  - be workable in itself and not create significant new problems at the same time it attempts to address old ones
  - allow further evolution of solutions to remaining problems
    - respond to changes in circumstances
    - not become an obstacle to further steps that the region supports



- For short-term markets
  - Effective "de-pancaking" of the regional transmission system in two respects
    - Eliminate the need for multiple submissions to individual transmitters
    - Eliminate fixed-cost-based, volumetric charges for short-term transactions
- Short-term market objectives are addressed through the work of the TSLG



- On long-term pricing:
  - "Company rate approach" (license-plate rate structure) to eliminate multiple, volumetric fixed-cost charges for long-term service



- Pricing Work Group's specific guidelines derived from Regional Proposal:
  - Honor existing contracts
  - Provide revenue sufficiency for transmission owners
  - Reduce or eliminate rate pancaking
  - Avoid or minimize cost shifts
  - Apply a "company rate approach" (which was later given a very precise definition in the Grid West Operational Bylaws)
  - Work compatibly with the TSLG proposal for Grid West market and operational design



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- Grid West physical-rights-based scheduling
  - All users must have physical rights obtained in advance before they can submit schedules to Grid West
  - The physical rights must match the injection and withdrawal points specified in their schedules
  - Legacy arrangements, services, and payments will be left in place



- ➤ These legacy uses:
  - take up most of the available capacity on the Grid West transmission owners' existing facilities
  - account for the vast majority of transmission owners' cost recovery for their existing facilities
  - are expected to continue, for the most part, while the "company rate approach" is in effect
    - The money will continue to go directly to transmission owners and contribute to cost recovery for existing system



- New Grid West service will be incremental to the legacy arrangements
- Based on 2003 data, total transmission owner revenue requirement: approximately \$1.8 billion
- Of that \$1.8 billion, about \$100 million relates to 2003 revenues from short-term and nonfirm transactions



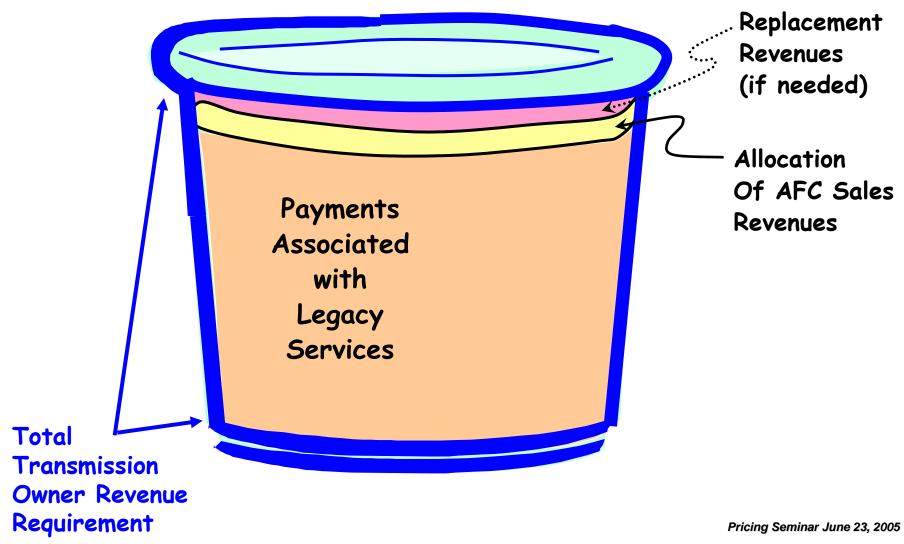
- Grid West will sell new short term service (IWRs) in the reconfiguration services market
  - Auction price mechanism we can't predict revenues
  - ➤ A conservative assumption would be to generate at least half of 2003 revenues (\$50 million)
  - Remaining \$50 million about 3% of total revenue requirement



- Might also need to replace revenues from some discontinued long-term transactions
  - > How much will that be?
  - ➤ We don't know, but other than annual pointto-point contracts on the NorthWestern system, the Pricing Work Group doesn't expect it to be a lot



## Sources of Funds for Transmission Owners' Revenue Requirements





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- System-wide flow-based physical rights approach for managing congestion
- Any schedule for transferring power through the system must be accompanied by appropriate transmission rights
  - Legacy rights
  - ➤ New IWRs issued by Grid West
- Every injection point and withdrawal point used for scheduling will be validated against the user's set of rights
- Grid West acts as single "gate-keeper" for issuing all new service rights



- New Grid West service can be purchased as
  - Short-term IWRs obtained through Grid West reconfiguration services market or
  - Long-term IWRs obtained through long-term service request
    - Issued from AFC if possible
    - System upgrade/expansion if necessary
- Grid West will issue requested IWRs from AFC if use of the IWR to schedule power on the Grid West system will not violate operational criteria
  - Grid West determines, on a system-wide basis, how power flows will be affected by the IWR

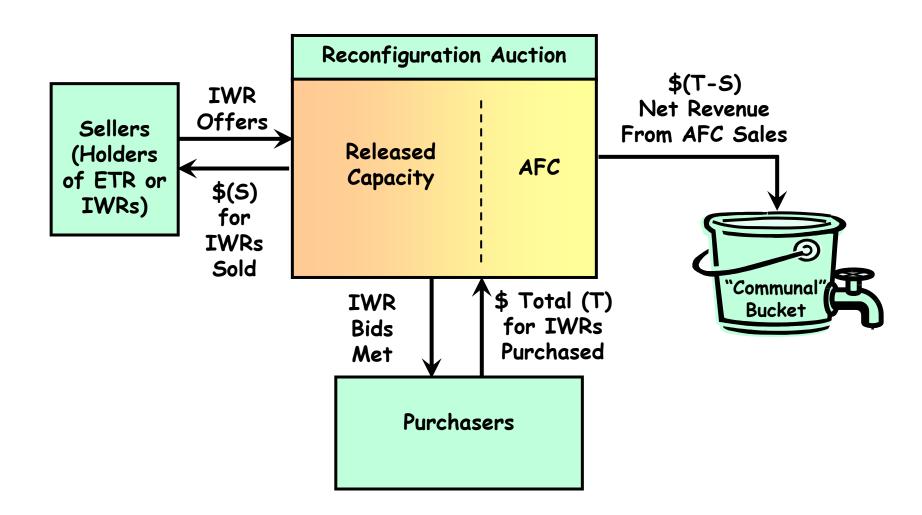


- Existing (legacy) transmission rights are protected and unchanged by Grid West
- No need to "convert" legacy rights into another form
- Reconfiguration Service markets (RCS)
  - Short-term (less than one year)
  - Holders of legacy rights can offer them to other eligible customers (if permitted)
  - Grid West also issues short-term IWRs from AFC
  - Eliminates need for identical match between the buyers' and sellers' injection and withdrawal points



#### **Revenue Flow for Reconfiguration Service**

(Short-Term IWR)





- Through and Out (Export) Transactions
  - Through and out transactions will contribute to the embedded system costs along with all other users
    - They pay for the necessary physical rights



# Recap of Market and Operations Design

- Through and Out (Export) Transactions
  - Rights could be in one of three forms:
    - Legacy rights
      - Embedded cost-based rate
    - New short-term IWRs from RCS
      - If issued from AFC, revenues go to Grid West initially, then to transmission owners
    - New long-term IWRs from Grid West
      - If issued from AFC, embedded cost rate or an auction-based charge
  - Otherwise, "or" pricing for upgrade or expansion



# Recap of Market and Operations Design

- Through and Out (Export) Transactions
  - ➤ This means no need for separate, additional charges for exports ("through and out" transactions)



#### **Comparison - RTO West Stage 2 and Grid West**

RTO West		Grid West		
>	Transmission Use Service allows all eligible users to submit schedules	>	Users must have physical rights to submit schedules	
>	Accept all schedules and manage through redispatch	>	Issue service rights up to system capability	
>	Service in the form of Financial Transmission Rights (congestion hedges)	>	Near-term service (reconfiguration service markets)	
>	No long-term service using existing capacity	>	<ul><li>Long-term service using existing capacity</li><li>Cost-based options</li><li>Auction-based options</li></ul>	
>	No explicit pricing proposal for long-term service requiring capacity expansion	>	New long-term service requiring capacity expansion  • "or" pricing	
>	"Backstop" cost recovery fee to assure revenue sufficiency	>	Replacement revenues to assure revenue sufficiency	
>	Separate fee for "external interface access" ("through and out" (export) transactions)	>	"Through and out" (export) transactions contribute to embedded system costs through payment for physical rights	
>	Grid Management Charge	>	Grid Management Charge	



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- Legacy arrangements, services, and payments will be left in place
- These uses
  - take up most of the available capacity on the Grid West transmission owners' existing facilities
  - account for the vast majority of transmission owners' cost recovery for their existing facilities
  - are expected to continue, for the most part, while the "company rate approach" is in effect
    - The money will continue to go directly to transmission owners and contribute to cost recovery for existing system



- "Mandatory rollover"
  - Transmission owners must maintain their rights on each others' systems if needed for load service
  - Maintain payments to maintain rights
  - Required at least as long as "company rate approach" is in effect



- New Grid West service will be incremental to the legacy arrangements
- New service will be available as:
  - Short-term IWRs obtained through Grid West reconfiguration services market or
  - Long-term IWRs obtained through long-term service request
    - Issued from AFC if possible
    - System upgrade/expansion if necessary
- Grid West pricing, terms, and conditions (e.g., OATT) would apply to the new service



- Process for obtaining new service
  - Short-term IWRs obtained through Grid West reconfiguration services market
  - Requests for new long-term IWRs queuing process like today's OATT procedures
    - There may not be a need for queuing, or process could be different, if long-term IWRs are auctioned



- Process for obtaining new service
  - Eligible customers apply to Grid West
    - Identify
      - Injection and withdrawal locations and amounts
      - Duration
      - Network IWRs or IWR pairs
      - etc.

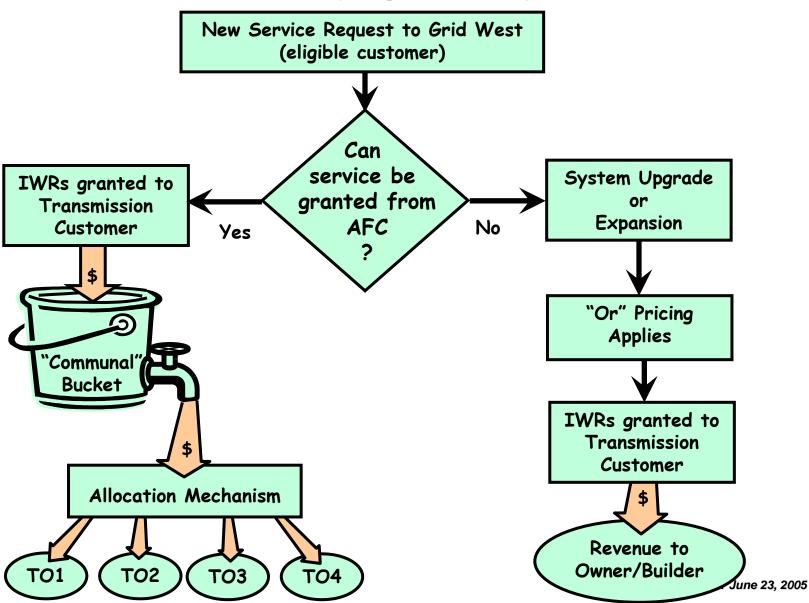


- Process for obtaining new service
  - Grid West uses flow-based methodology to assess existing system capabilities and commitments
  - New service will be granted from AFC if possible
  - ➤ If not, Grid West will oversee upgrade or expansion process



#### **Revenues for New Grid West Service**

(Long-Term IWRs)

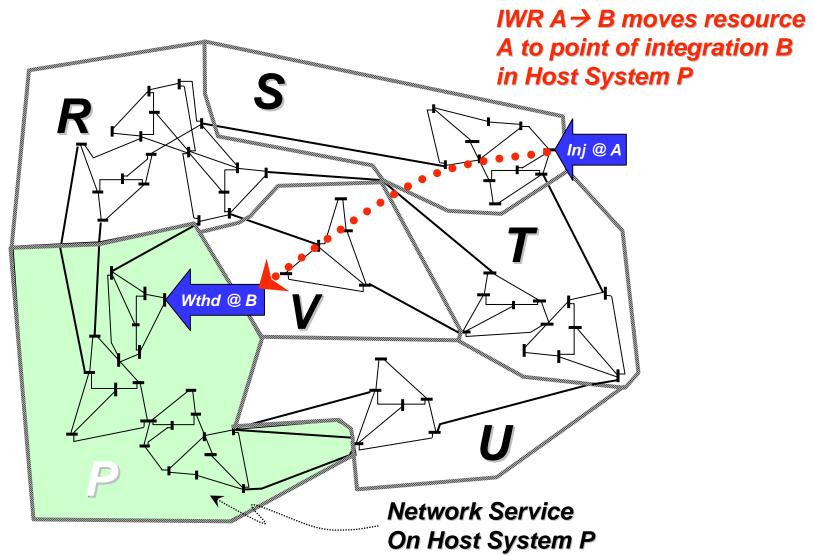




- Voluntary shift to Grid West administration of legacy service possible
  - Requires agreement of Grid West, legacy customer, and legacy provider
  - Only after rights certification process is complete
- It is possible to combine legacy service and new service from Grid West
  - ➤ For example, keep network service on "host" system and buy an incremental IWR to integrate an off-system resource
  - Details need to be fleshed out in future work



# Grid West Network Service with Additional Resource Outside Host System





- Two kinds of new long-term Grid West service proposed
  - > IWR pairs
    - Analogous to today's OATT point-to-point service
  - Interrelated set of network IWRs
    - Analogous to today's OATT network integration service



- Interrelated set of network IWRs
  - Available only within a single transmission owner's ("host") system
  - Restrictions analogous to today's OATT network service
    - Service to on-system load only
    - Service at any given time limited to what is needed to serve load
  - The ideas for new network IWRs are preliminary and should be revisited in future work
  - If Grid West started with single-system IWRs, could reconsider based on new information and demand for system-wide network service
- IWR pairs and network IWRs subject to different rates



#### **Legacy Service Versus New Service**

- For IWR pairs, the applicable rate for new long-term service would be
  - A company rate determined by the point of withdrawal (Option 1)
  - The higher of the rate at the injection point or the withdrawal point (Options 2)
  - A single transmission owner's company rate for single-system IWR pairs or a system-wide average rate for a multisystem IWR pair (Option 3)
  - Priced though an auction mechanism (Option 4)
- For network IWRs the applicable rate would be the company rate for the "host" system
- TSLG has not yet resolved the question of how specific the location of an injection or withdrawal "point" must be on the Grid West system



Illustrative Examples of How New Grid West Service Is Defined					
Example Description	Legacy Service	New Service			
a transmission owner using its own system to <b>meet</b> native load service obligations (or meet pre-existing transmission service agreements)	X				
load growth and contract extensions (i.e., rollover) under agreements that provide for load growth or rollover	X				
a customer <b>seeks new rights</b> beyond those granted in pre-existing transmission agreements (if any)		X			



Illustrative Examples of How New Grid West Service Is Defined					
Example Description		New Service			
<ul> <li>a customer of Utility A has pre-existing rights to network service on Utility A's system (including load growth).</li> <li>the customer's load has grown from 60 MW to 65 MW and the customer wants to serve part of its 65-MW load from a 10-MW generator located on the system of Utility B</li> <li>the customer maintains its network rights on the system of Utility A and can use transmission service on Utility A's system necessary to meet its full 65-MW load from resources on Utility A's system</li> <li>BUT, to get power from the generator on Utility B's system, the customer will need to buy a new IWR for 10 MW (injection point at the generator, withdrawal point at the point of integration under the network contract with Utility A)</li> <li>the 10-MW IWR is new service but continued use of network service rights on Utility A's system, including the load growth, is legacy service</li> </ul>	X	X			



Illustrative Examples of How New Grid West Service Is Defined					
Example Description	Legacy Service	New Service			
a customer has no pre-existing rights to use the Grid West transmission system requests new long-term IWRs; the customer could request new service either as an IWR pair, which could have an injection and withdrawal point anywhere on the entire Grid West system, or as a network IWR, which would be limited to load service using a single transmission owner's system		X			



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#### **Pricing Options**

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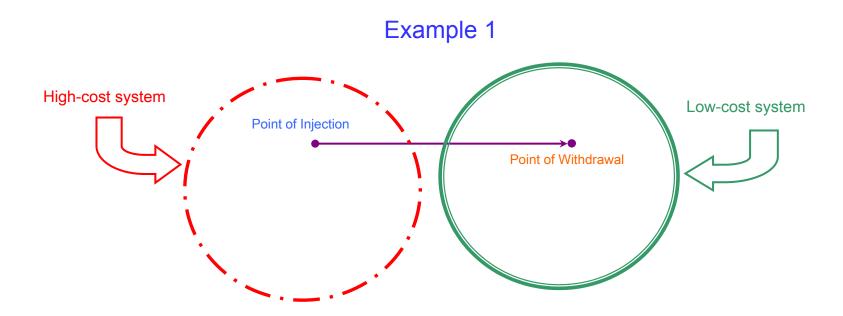
# **Pricing Options**

#### Company Rates

- Developed for each transmission owner's system based on that transmission owner's revenue requirement
  - Native load service generally expected to be treated as legacy service
  - A transmission owner could agree with Grid West to "translate" service to native load into new Grid West transmission service
  - In this case, the company rate for service to native load would presumably include wheeling cost for serving native load customers
- Specific rates for each given transmission owner will be developed through that transmission owner's rate-setting process



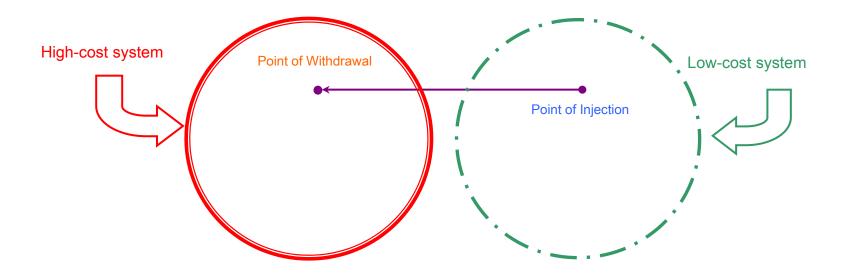
- Designed to reflect the Grid West Operational Bylaws
- IWR pairs priced by company rate at point of withdrawal



Option 1: Company rate of low-cost system would apply to IWR (withdrawal point)



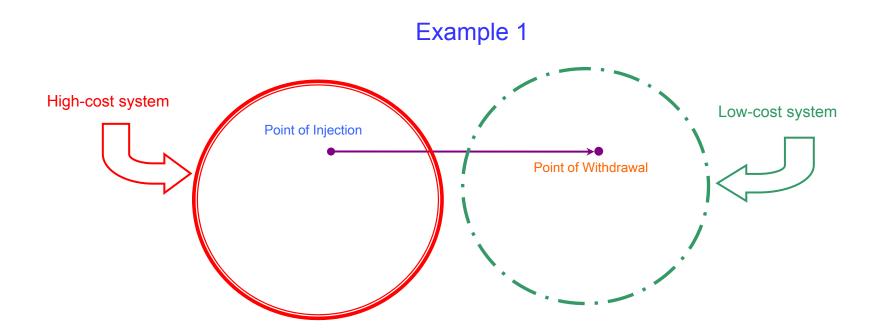
#### Example 2



Option 1: Company rate of high-cost system would apply to IWR (withdrawal point)



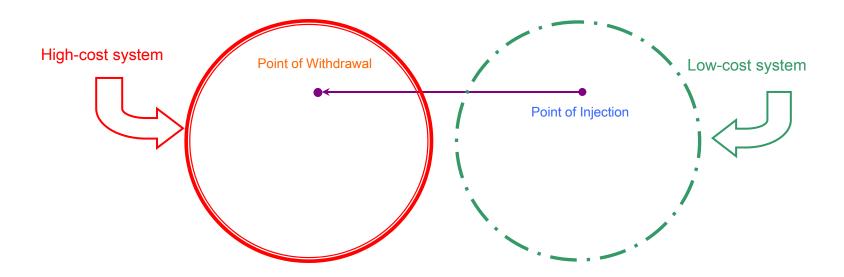
 IWR pairs priced by higher of the company rate at point of injection or the point of withdrawal



Option 2: Company rate of high-cost system would apply to IWR (injection point)



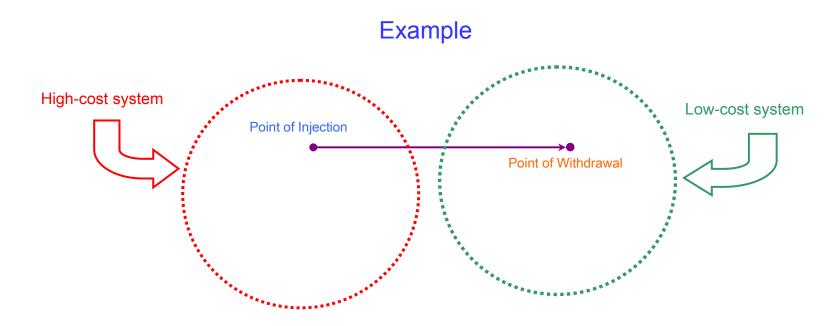
#### Example 2



Option 2: Company rate of high-cost system would apply to IWR (withdrawal point)



- Designed to reflect a mix of "local" and "long-distance" service
- "Local" company rate for single-system IWR pairs
- System-wide average rate for a multisystem IWR pairs



Option 3: System-wide average rate applies to IWR (because it's a multisystem right)



## Pricing Options – Options 1, 2, 3

- Possible issues associated with Options 1, 2, and 3
  - How to avoid "gaming" or "zone shopping" related to
    - Common facilities and corridors (e.g., head of the Pacific Intertie)
    - Contiguous facilities of different transmission owners (e.g., mid-Columbia hub)
    - Overlapping systems or systems made up of multiple control areas
  - ➤ For Option 3 what is a "single-system" right?



- IWR pairs priced by auction
- Auction mechanism allows buyers to signal willingness to pay
- Possible mechanisms that could be considered
  - Extend the Reconfiguration Services market (e.g., two years, five years, ten years, etc.)
  - "Matching" window other interested parties could submit competing transmission service requests
    - Could include different durations or IWR pairs
    - Highest net present value of transmission revenues wins



- Possible auction mechanisms that could be considered (cont'd)
  - IWR pairs (defined as market hubs or other common scheduling points)
    - Invite bids of different values and durations
    - Highest net present value of transmission revenues wins
  - ➤ It may be appropriate to impose a floor to protect against capacity being auctioned at low prices that over the long term has value



#### Comparison criteria:

- Providing revenue sufficiency for transmission owners
- Reducing or eliminating rate pancaking
- Avoiding or minimizing cost-shifts
- Fostering compatibility with the Grid West Operational Bylaws concept of "company rate approach"
- Relying on embedded cost or auction pricing
- Compatibility between pricing for service from existing facilities and pricing for service that requires upgrades or expansion
- Imposing similar charges for similar usage
- Other observations



Revenue Sufficiency

**Question:** What is the likelihood that this option will need replacement revenue?

**Answer:** None of the options directly address replacement revenue

- All options likely to require at least some replacement revenues
- Option 2 revenues > Option 1
- Option 2 revenues >? Option 3
- Option 3 revenues >? Option 1
- Option 4, if it maximizes transmission revenues as compared to 1, 2, and 3, would need least replacement revenues
  - Least-tested alternative



Rate Pancaking

**Question:** Does this option reduce or eliminate rate pancaking?

**Answer:** Relative to current pricing, all options reduce or eliminate pancaking for new service



#### Cost Shifts

**Question:** What is the likelihood that this option will trigger cost shifts?

**Answer:** All four options are comparable on revenue sufficiency for transmission owners

- Potential for "cost shifting" from customer perspective
  - Depends on customer behavior today and in the future
  - For single-system use, Options 1, 2, and 3 comparable to today
  - For multisystem uses, Options 1, 2, and 3 most likely cost less than today's pancakes
  - A multisystem right with a withdrawal point on a high-cost system probably costs more under Options 1 and 2 than under Option 3
  - Option 4 is expected to best match price with the customers' perceived value of capacity



Operational Bylaws

**Question:** Does this idea meet the Operational Bylaws language?

**Answer:** Only Option 1 fits well under "company rate approach" language

Short-Term Versus Long-Term Pricing

**Question:** How does this option compare with pricing near-term services, *i.e.*, the reconfiguration services market?

**Answer:** Only Option 4 relies on auction-based pricing, consistent with the reconfiguration services auction



Service from AFC Versus Expansion

**Question:** How does this option compare with pricing long-term service that needs system expansion?

**Answer:** Expansion would rely on "or" pricing

- Higher of incremental or embedded (with the cost of expansion rolled in)
- Option 1: embedded rate = point of withdrawal
- Option 2: embedded rate = higher of withdrawal or point of injection
- Option 3: embedded rate = company rate for "local" service or system-wide average rate
- Option 4: embedded rate = system-wide average rate



- Other Observations
  - Options 1, 2 and 3 use location of injection and withdrawal points
    - "Granularity"
    - Complexity related to common or contiguous facilities; overlapping systems



### **Pricing Options – Comparison**

#### Other Observations

- ➤ Option 4
  - Designed to maximize revenues (minimize need for replacement revenues), but this is yet untested
  - Designed to extend the auction-based pricing of RCS
  - Significant departure from traditional cost-based rate-making
  - May be necessary to impose some restrictions, such as floor prices, to mitigate perceived risks
  - Need for a long-term service queue might be significantly reduced



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- Applies when a new long-term service request cannot be granted from AFC
- Would implement FERC "or" pricing
  - > Higher of
    - embedded cost rate (after rolling in cost up upgrades and expansion)

OR

incremental cost of upgrades and expansion



- Should be compatible with FERC's pricing policies
  - Traditionally "or" pricing has applied to a corporate-average embedded cost
  - ➤ FERC has indicated that it would "look approvingly" on other embedded cost options, such as
    - Postage-stamp
    - Zonal



- Intended to send proper price signals and promote economic efficiency
- Would protect against rate increases to existing customers using systems that need to be upgraded or expanded for new service requests
- Allows case-by-case determinations of who benefits from expansion
  - Could inform cost allocation decisions



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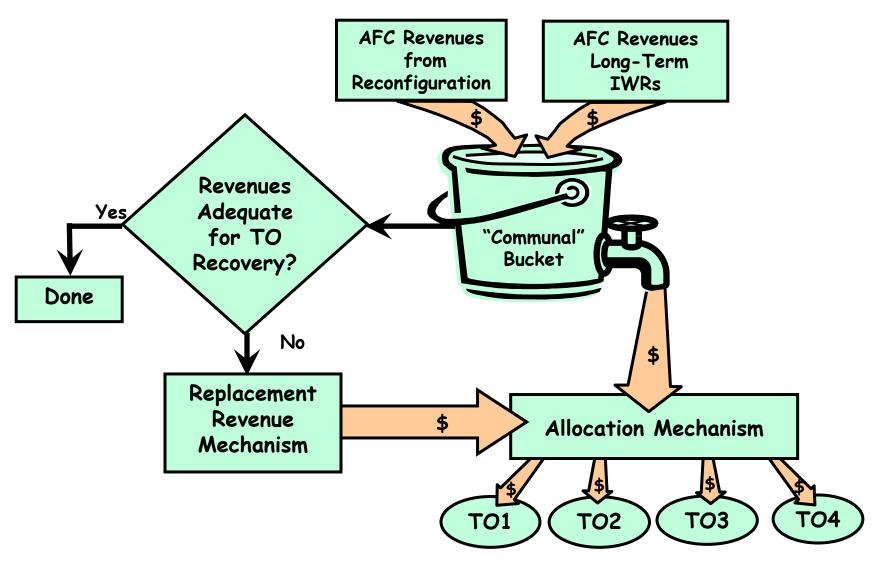
#### **Revenue Allocation**

- All revenues from Grid West AFC sales (shortand long-term) placed in "communal bucket"
- Allocated by how much "lost revenue" a transmission owner incurs because of Grid West implementation
  - More discussion of lost revenues coming up
- Any excess allocated according to relative revenue requirement
  - Transmission owner's revenue requirement as a percentage of combined total for all transmission owners



#### **Allocation of Revenues from Grid West AFC Sales**

(Long-Term and Short-Term)





#### **Revenue Allocation**

- An important exception
  - > Revenues from new long-term network IWRs
    - Revenues would go directly to owner of "host" system
    - Fits better with charging by load-ratio share
    - Preliminary view; needs further work



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- Triggered only if some transmission owners still have "lost revenues" after allocation of AFC revenues
- Lost revenues would include effects of
  - Eliminating traditional short-term and non-firm sales by transmission owners
  - De-pancaking
  - Shifting all new service to Grid West



- Lost revenues would NOT include
  - Failure to seek appropriate retail regulatory relief
    - Region should not make up costs that regulators have not recognized
  - > Failure to file updated transmission service rates
  - > Shortfalls not related to transmission service
  - Decreased earnings or increased costs resulting from normal business risks or practice



- Two options for generating replacement revenues if needed:
  - > Transaction-Based
    - Schedules (megawatt-hours) or actual energy usage
    - a.k.a. "peanut butter"
    - Heavier users pay more
    - Off-system users also contribute



- Two options for generating replacement revenues if needed:
  - Load-Based
    - Charge transmission owners based on their peak load relative to system-wide peak load
    - Consistent with load-based pricing
    - Avoids volume-based charges that might impede marginal transactions
    - More like a sunk cost
    - Avoids revenue volatility from projecting future usage to specify billing determinant



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#### **Grid Management Charge (GMC)**

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## Grid Management Charge (GMC)

- Formula rate designed to recover administrative and operating costs
- Costs recovered through the GMC would include
  - > Start-up, operating, and development costs
    - Loans for Grid West development amortized over a finite time period
  - Market monitoring costs
  - Cost to administer planning and expansion process



### **Grid Management Charge**

- Structure of Grid Management Charges may need to distinguish between
  - Cost to administer system-wide services and
  - Consolidated Control Area costs
    - Balancing and reserve markets
- Or, Grid West could
  - > Have one GMC for all transactions
  - Apply separate rates for Consolidated Control Area services



## **Grid Management Charge**

- Schedule-based charge (megawatt-hours)
  - > Heavier users pay more
  - ➤ Off-system users also contribute



### **Grid Management Charge**

- Example calculation for illustration:
  - Using hypothetical annual expenses of \$50 million
  - ➤ GMC approximately \$0.195/MWh or 0.195 mills/kWh
    - Using 2004 NWPP energy to load for denominator (256,454,840 MWh)
      - Denominator could be higher if scheduled megawatt hours exceed load
      - This would lower per-unit cost
  - About 1/3 of BPA Scheduling Control and Dispatch charge for 2006



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#### **What Comes After Company Rates**

Question, Answers, Feedback



# What Comes After Company Rates

- Operational Bylaws require "company rate approach" for at least the first eight years of commercial operation
- After minimum eight-year period, Grid West would have at least three options:
  - ➤ Leave its then-current company rate structure in place
  - Change to another form of company rate structure
  - Depart from the "company rate approach" after complying with the "Special Issues List" procedures
    - In all cases "legacy" rights would continue to be honored
      - Legacy rights issued by Grid West transmission owners before Grid West began operations
      - New IWRs issued by Grid West after operational start-up
    - Grid West would need to address resulting transition issues (if any)



### **Questions**

**Answers** 

Feedback